

## Subject Index to Volumes 81-87, 1997

- Abowitz-Ladik Model, Symplectic Methods for, 82:17
- Additive Schwarz Preconditioners, Two-Level, for  $P_1$  Nonconforming Finite Elements for Nonsymmetric and Indefinite Problems, 87:1
- Age-Structured Population Dynamics and Epidemiology, Splitting Methods for the Numerical Approximation of Some Models of, 87:69
- Agriculture, Sustainable, and the Ecosphere, A Dynamical Economic Model of, 84:221
- Algebraic Riccati Equations, On the Matrix-Sign-Function Method for Solving, 86:157
- Almost Reflectionless Potentials, Ambiguities and, 83:79
- Alternating Offer Method, A Note on, 82:129
- Ambiguities and Almost Reflectionless Potentials, 83:79
- Amphiphilic Counterions, Effect of, on the Gel-Fluid Phase Transition, 87:261
- Aquaculture Policy Decision Making in Southern Thailand, A Nonlinear Programming Model for Analyzing, 83:241
- Arithmetic Mean Method, Two-Stage, 85:245
- Bifurcation Analysis of Two Predator-Prey Models, 85:97
- Block Bordered Linear Systems, Parallel Hybrid Iteration Methods for, 86:37
- Block Boundary Behavior Methods for Linear Hamiltonian Systems, 81:49
- Boltzmann Model for Reacting Gases, Numerical Simulations of a, 85:61
- Boundary Element Method, A New  $h$ -Adaptive Refinement Scheme for, Using Local Reanalysis, 82:239
- Boundary-Layer Equation Arising in an Incompressible Fluid, A Study on a, 87:199
- Boundary Singularity, Numerical Methods for Magnetized Plasma Equations with, 85:149
- Boundary Value Problems, Nonlocal, of Nonlinear Elliptic Systems in Unbounded Domains, 86:115
- Cell Exclusion Algorithms of Finding All Zeros of Vector Functions, A General CDC Formulation for Specializing the, 86:235
- Cellular Automaton Plays Minesweeper, How, 85:127
- Chebyshev Spectral-Finite Element Method for Three-Dimensional Unsteady Navier-Stokes Equations, 82:97
- Circulant Preconditioners from Kernels, A Note on Construction of, 83:3
- Circular and Hyperbolic Quaternions Octonions, and Sedenions—Further Results, 84:27
- Coefficient Inverse Problem of Differential Equations, A Widely Convergent Generalized Pulse-Spectrum Technique for, 81:97
- Combinatorial Identities Associated with the Vandermonde Convolution, Some, 84:97
- Competition in Periodic Environments, On a Model of, 82:207
- Complex Integrals Involving Absolute Values, A Study on, 85:281
- Computer Algebra, Solutions of a Variable-Coefficient Kadomtsev-Petviashvili Equation via, 84:125
- Confidence Intervals, Shortest Two-Tailed, 84:65
- Conflict Resolution, Graph Model for (GMCR), in Environmental Conflict Management, 83:117
- Controllable Solution Set to Interval Static Systems, 86:185
- Convergence of a Class of Parallel Decomposition-Type Relaxation Methods, 81:1
- Convergence of Two-Step Methods Generated by Point-to-Point Operators, 82:85
- Convex Nonlinear Programming, A Combined Homotopy Interior Point Method for, 84:193
- Corner Domains, Extrapolation of Numerical Solutions for Elliptic Problems on, 83:53
- Coupled Nonlinear Maps, Dynamics of, Application to Ecological Modeling, 82:137
- Curved Domains, Natural Coordinate System Approach to Coupled  $n$ -Phase Fluid Flow in, 85:297
- Deception in a Conflict Among Subjects with Interdependent Preference, Impossibility of, 81:221
- Decision Support System GMCR in Environmental Conflict Management, 83:117

- Decomposition Solution Series, Necessary Conditions for the Appearance of Noise Terms in, 81:265
- Differential Equations, Oscillations of Second Order Neutral Functional, 83:27
- Differential Equations, Pulse-Spectrum Technique for the Coefficient Inverse Problem of, 81:97
- Dimensional Families, A Sphere-Packing Breakthrough via, 83:1
- Discontinuous Elliptic Coefficients, Estimation of, 81:113
- Discrete Dynamic System, A New Forecasting Method of, 86:61
- Discrete Minimax Problem, An Interval Maximum Entropy Method for, 87:49
- Discrete Random Variables, On the Exact Convolution of, 83:69
- Discrete-Time Dynamical Systems Under Observational Uncertainty, 82:181
- Disease Transmission Model, Limit Cycles in a, 86:85
- Double Fourier Series, Analysis of Linear Distributed Parameter Systems via, 87:205
- Doubly-Stochastic Tridiagonal Action Matrix, Markov Finite Approximation of Frobenius-Perron Operator with, 85:265
- Ecological Modeling, Coupled Nonlinear Maps and Application to, 82:137
- Ecosphere, Dynamical Economic Model of Sustainable Agriculture and, 84:221
- Eigenvalue Problems with Nonlocal Boundary or Transition Conditions, 2nd Order Elliptic, Finite Element Approximation for, 82:1
- Elliptic Partial Differential Equations, Multi-quadratic Method for Numerical Solution of, 84:275
- Environmental Conflict Management, Decision Support System GMCR in, 83:117
- Environmental Management, Multiple Objective Decision Making for "Lokahi" (Balance) in, 83:97
- Environmental Management, Multiple Objective Decision Making in, Special Issue, 83(2&3)
- Environmental Regulations, How Penalty Affects Enforcement of, 83:281
- Enzyme Kinetic Systems, A Novel Method for Analyzing, 87:161
- Epstein-Hubbell Generalized Elliptic-Type Integral Using Residue Theory, A Study on, 83:19
- Erratum: Extremum Points of a Convex Function, 84:95
- Error Bounds Estimate of Weighted Residuals Method Using Genetic Algorithms, 81:207
- Estimation Procedures, Regularized Output Least Squares, Resolution of, 81:139
- Exceptional Families and Finite-Dimensional Variational Inequalities over Polyhedral Convex Sets, 87:111
- Exponential Stress-Strength Models with Explanatory Variables, Estimation of Reliability, 84:269
- Extremum Points of a Convex Function [Erratum], 84:95
- Falkner-Skan Equation, A Numerical Method for the Solution of, 81:259
- Farms, Targeting, to Improve Water Quality, 83:173
- Fast Galerkin Method to Obtain the Periodic Solutions of a Nonlinear Oscillator, 86:261
- Finite Difference Equations for ODEs and 1-D PDEs, Nonstandard, Based on Piecewise Linearization, 86:11
- Finite Element Approximation for 2nd Order Elliptic Eigenvalue Problems with Nonlocal Boundary or Transition Conditions, 82:1
- First Order Initial Value Problems, Rapid Convergence of the Iterative Technique for, 87:217
- Flat Violin Boundary, On a Geometry of, 81:201
- Forecasting Method of Discrete Dynamic System, A New, 86:61
- Fourier and Laplace Transforms Under Nonlinear Constraints, Maxentropic Reconstruction of, 85:117
- Fractional Calculus Operators and Their Applications Involving Power Functions and Summation of Series, 81:287
- Frobenius-Perron Operator with Doubly-Stochastic Tridiagonal Action Matrix, Markov Finite Approximation of, 85:265
- Galerkin Method, Variable Time Step, for a One-Dimensional Stefan Problem, 81:189
- Gel-Fluid Phase Transition, Effect of Amphiphilic Counterions on, 87:261

- Genetic Algorithms, Error Bounds Estimate of Weighted Residuals Method Using, 81:207
- Geometry of the Flat Violin Boundary, 81:201
- GMRES Method, A Preconditioned, 85:201
- Grain Flows, Numerical Simulation of Pattern Formation in, 84:145
- Grid Generation Algorithms, Multiblock Multigrid: Overcoming Multigrid Anisotropy, 84:247
- Hamilton-Jacobi Inequality, Approximate Solution of, by Neural Networks, 84:49
- Harmonic and Intermodulation Performance of Some Abrupt and Weak Nonlinearities, 83:87
- Heat-Conduction Equation, On Direct Methods for the Discretization of a, Using Spline Functions, 85:87
- Hopf Bifurcation, A Method for the Numerical Computation of, 86:137
- Hyperbolic Quaternions, Octonions, and Sedenions, Circular and, 84:27
- Hyperquadrilaterals, Trapezoidal Rule for Multiple Integrals over, 87:227
- Imbricate Series of Unity: Construction of Lighthill's Unitary Functions, 86:1
- Incompressible Fluid, Boundary-Layer Equation Arising in an, 87:199
- Initial-Boundary Value Problem of a Nonlinear Klein-Gordon Equation, 84:77
- Initial-Value Problems, Piecewise-Linearized Methods for, 82:273
- Integrodifferential Equations for the Two-Dimensional Transition Kernels of Invariant Imbedding, 82:67
- Integro-Differential Equations, Second-Order Fredholm, Unconditionally Stable Methods for, 81:275
- Intelligent Transportation Systems, Passage-Detector-Based Traffic Queue Estimation in, 86:93
- Interdependent Preference, Impossibility of Deception in a Conflict Among Subjects with, 81:221
- Interior Point Method, Combined Homotopy, for Convex Nonlinear Programming, 84:193
- Interval Maximum Entropy Method for a Discrete Minimax Problem, 87:49
- Interval Static Systems, Controllable Solution Set to, 86:185
- Invariant Imbedding, Integrodifferential Equations for the Two-Dimensional Transition Kernels of, 82:67
- Inviscid Fluid Flows, Growth of Perturbations Associated with the Linear Stability of, 81:23
- Isoparametric Finite Element Methods, Preconditioning, Taking into Account Numerical Integration, 87:271
- Iteration Methods for Block Bordered Linear Systems, Parallel Hybrid, 86:37
- Iterative Methods with Cubical Convergence, A Construction Procedure, 85:181
- Kadomtsev-Petviashvili Equation, Variable-Coefficient, Solutions of, via Computer Algebra, 84:125
- Klein-Gordon Equation, Nonlinear, An Initial-Boundary Value Problem of a, 84:77
- Klein-Gordon-Zakharov Equation, Non-Perturbative Solution of, 81:89
- Kobori, On a Theorem of, 85:287
- Land Use Analysis, Multiple Criteria, 83:195
- Land Uses that Minimize Water Table Rise and Salinization, Profitable, Framework to Identify, 83:217
- Land-Water Reallocation in Hawaii, Multi-criterion Decision Support for a Conflict over Stream Diversion and, 83:153
- Laplace Transform, Recursive Pseudo-Inversion of, on the Real Line, 84:213
- Laplace Transform Dual Reciprocity Method (LTDRM), An Application of, to Transient Diffusion Problems with Nonlinear Material Properties and Nonlinear Boundary Conditions, 87:127
- Lighthill's Unitary Functions, Construction of: The Imbricate Series of Unity, 86:1
- Limit Cycles in a Disease Transmission Model, 86:85
- Linear Boundary Value Problem of Order  $2n$ , Two Methods for Solution of a, 86:215
- Linear Distributed Parameter Systems via Double Fourier Series, Analysis of, 87:205
- Linear Hamiltonian Systems, Block Boundary Behavior Methods for, 81:49
- Linear Ordered Rank Statistics for Detecting Early Differences between Two Distributions, On Using, 84:103

- Linear Programming Problems, Solving Exactly, 81:69
- Local Reanalysis, A Refinement Scheme for the Boundary Element Method Using, 82:239
- Magnetized Plasma Equations with Boundary Singularity, Numerical Methods for, 85:149
- Massively Parallel Search for Linear Factors in Polynomials with Many Variables, 85:227
- Matrix-Sign-Function Method for Solving Algebraic Riccati Equations, 86:157
- Maxentropic Reconstruction of Fourier and Laplace Transforms Under Nonlinear Constraints, 85:117
- Mesh Independence Principle for Inexact Newton-Like Methods and Their Discretizations under Generalized Lipschitz Conditions, 87:15
- Minimal Residual Smoothing in Multi-Level Iterative Method, 84:1
- Multicriteria Tools for the Trade-off Analysis in Rural Planning Between Economic and Environmental Objectives, 83:261
- Multigrid, Residual Scaling Techniques in, I: Equivalence Proof, 86:283
- Multigrid Anisotropy, Overcoming, 84:247
- Multi-Level Iterative Method, Minimal Residual Smoothing in, 84:1
- Multiple Criteria Land Use Analysis, 83:195
- Multiple Objective Decision Making in Environmental Management, Special Issue, 83(2&3)
- Multiquadric Method, Application of, for Numerical Solution of Elliptic Partial Differential Equations, 84:275
- Natural Coordinate System Approach to Coupled n-Phase Fluid Flow in Curved Domains, 85:297
- Navier-Stokes Equations, Three-Dimensional Unsteady, Chebyshev Spectral-Finite Element Method for, 82:97
- Neural Networks, Approximate Solution of Hamilton-Jacobi Inequality by, 84:49
- Nonlinear Delay-Differential Systems, Stability of: Boundary Criteria, 87:247
- Newton-Like Methods, Inexact, and Their Discretizations under Generalized Lipschitz Conditions, A Mesh Independence Principle for, 87:15
- Noise Terms in Decomposition Solution Series, Necessary Conditions for the Appearance of, 81:265
- Nonlinear Delay Differential Equations in  $W_2^{(1)}$ , Control of, with Economic Applications, 85:17
- Nonlinear Difference Equations, Oscillation Theorems for Some, 83:43
- Nonlinear Elliptic Systems in Unbounded Domains, Nonlocal Boundary Value Problems of, 86:115
- Nonlinear Oscillator, A Fast Galerkin Method to Obtain the Periodic Solutions of, 86:261
- Nonlinear Programming Model for Analyzing Aquaculture Policy Decision Making in Southern Thailand, 83:241
- Nonlinearities, Abrupt and Weak, Harmonic and Intermodulation Performance of Some, 83:87
- Non-Perturbative Solution of the Klein-Gordon-Zakharov Equation, 81:89
- Nonsymmetric and Indefinite Problems, Two-Level Additive Schwarz Preconditioners for P1 Nonconforming Finite Elements for, 87:1
- ODEs with Oscillating Solutions, Modified Runge-Kutta Methods for the Numerical Solution of, 84:131
- One-Dimensional Stefan Problem, A Variable Time Step Galerkin Method for, 81:189
- Oscillation Theorems for Some Nonlinear Difference Equations, 83:43
- Oscillations of Second Order Neutral Functional Differential Equations, 83:27
- Parameter Identification Problem, Analysis of, 82:39
- Partial Differential Equation Arising in Stokes Flow, Solution of a, 85:139
- Passage-Detector-Based Traffic Queue Estimation in Intelligent Transportation Systems: A Computational Study of Competing Algorithms, 86:93
- Pattern Formation in Grain Flows, Numerical Simulation of, 84:145
- Peakons and Coshoidal Waves: Traveling Wave Solutions of the Camassa-Holm Equation, 81:173
- Perturbations Associated with the Linear Stability of Inviscid Fluid Flows, Growth of, 81:23

- Piecewise Linearization, Nonstandard Finite Difference Equations for ODEs and 1-D PDEs Based on, 86:11
- Point-to-Point Operators, On the Convergence of Two-Step Methods Generated by, 82:85
- Polyhedral Convex Sets, Exceptional Families and Finite-Dimensional Variational Inequalities over, 87:111
- Polynomials with Many Variables, Massively Parallel Search for Linear Factors in, 85:227
- Porous Media, Calculation of First Phase Saturation during Displacement of Oil by Water from, 85:1
- Power Functions and Summation of Series, Fractional Calculus Operators and, 81:287
- Preconditioned Newton Methods Using Incremental Unknowns Methods for the Resolution of a Steady-State Navier-Stokes-like Problem, 87:289
- Predator-Prey Models, Bifurcation Analysis of Two, 85:97
- Pulse-Spectrum Technique, for the Coefficient Inverse Problem of Differential Equations, 81:97
- Quasi-steady Models, Simulation of Unsteady Turbulent Flows with the Effect of Fluctuating External Velocity by Using, 87:95
- Quotient Systems, System Behavior in, 81:31
- Radial Functions, Compactly Supported, and the Strang-Fix Condition, 84:115
- Reacting Gases, Numerical Simulations of a Boltzmann Model for, 85:61
- Reaction-Diffusion System, On the Dynamics of, 81:93
- Real-Time Computation of Singular Vectors, 86:197
- Recursive Pseudo-Inversion of the Laplace Transform on the Real Line, 84:213
- Regression Models with AR(2) Errors, Optimum Influence of Initial Observations in, 82:57
- Regularized Output Least Squares Estimation Procedures, Resolution of, 81:139
- Relaxation Methods, On the Convergence of a Class of Parallel Decomposition-Type, 81:1
- Reliability, Estimation of, for Exponential Stress-Strength Models with Explanatory Variables, 84:269
- Residual Scaling Techniques in Multigrid, I: Equivalence Proof, 86:283
- Residue Theory, the Epstein-Hubbell Generalized Elliptic-Type Integral Using, 83:19
- Restricted Linear Equations, Iterative Methods for Solving, 86:171
- Runge-Kutta Methods, Modified, for the Numerical Solution of ODEs with Oscillating Solutions, 84:131
- Rural Planning, Multicriteria Tools for Trade-off Analysis in, 83:261
- Sedenions, Circular and Hyperbolic Quaternions, Octonions, and—Further Results, 84:27
- Set Variational Inequalities, 85:165
- Singular Vectors, Real-Time Computation of, 86:197
- SPH Material Dynamics Computations, Conservative Smoothing Stabilizes Discrete Numerical Instabilities in, 85:209
- Sphere-Packing Breakthrough via Dimensional Families, Research Announcement, 83:1
- Spline Functions, Direct Methods for the Discretization of a Heat-Conduction Equation Using, 85:87
- Splitting Methods for the Numerical Approximation of Some Models of Age-Structured Population Dynamics and Epidemiology, 87:69
- Stability of Neutral Delay-Differential Systems: Boundary Criteria, 87:247
- Stable Chemical Systems, 81:245
- Statistics, Linear Ordered Rank, for Detecting Early Differences between Two Distributions, 84:103
- Steady-State Navier-Stokes-like Problem, Preconditioned Newton Methods for the Resolution of, 87:289
- Stokes Flow, Solution of a Partial Differential Equation Arising in, 85:139
- Strang-Fix Condition, Compactly Supported Radial Functions and, 84:115
- Stream Diversion and Land-Water Reallocation in Hawaii, Multicriterion Decision Support for a Conflict over, 83:153
- SWAGMAN Options: A Hierarchical Multicriteria Framework to Identify Profitable Land Uses that Minimize Water Table Rise and Salinization, 83:217

- Symplectic Methods for the Ablowitz-Ladik Model, 82:17
- System Behavior in Quotient Systems, 81:31
- Transient Diffusion Problems, Application of the LTDRM to, 87:127
- Trapezoidal Rule for Multiple Integrals over Hyperquadrilaterals, 87:227
- Traveling Wave Solutions of Camassa-Holm Equation, 81:173
- Triangle Free Graphs with Maximum Vertex of Degree 3, NP-Completeness of Chromatic Index in, 83:13
- Trust Region Algorithm for Nonsmooth Optimization, 85:109
- Unconditionally Stable Methods for Second-Order Fredholm Integro-Differential Equations, 81:275
- Unconstrained Discrete-Time Optimal Control Problems, Some Efficient Algorithms for, 87:175
- Unsteady Turbulent Flows with the Effect of Fluctuating External Velocity, Simulation of, 87:95
- Vandermonde Convolution, Some Combinatorial Identities Associated with, 84:97
- Vector Functions, Specializing the Cell Exclusion Algorithms of Finding All Zeros of, 86:235
- Water Quality, Targeting Farms to Improve, 83:173
- Water Table Rise and Salinization, Multicriteria Framework to Identify Profitable Land Uses that Minimize 83:217
- Water Uptake in Plants, A Model for, 84:163

